



NOAA

NATIONAL OCEANIC AND
ATMOSPHERIC ADMINISTRATION
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NOAA, IOOS® Partners Employing Underwater Gliders and Surface Radar to Assist In Gulf Water Sampling

Using underwater unmanned gliders and coastal high-frequency radar stations, NOAA's Integrated Ocean Observing System (IOOS®) and its regional partners from across the nation are capturing data that will assist in the Deepwater Horizon BP oil spill response by locating and tracking oil at various levels in the water column as well as on the Gulf surface.

Ten unmanned underwater robots equipped with sensors called fluorometers will measure matter in the water, which can help indicate the presence of oil. Scientists, however, must still confirm oil presence through water sampling. Gliders are also capable of collecting temperature, salinity, currents, density and additional variables that describe conditions below the surface of the sea. The gliders travel at various depths. Some gliders dive no deeper than 100 feet, while others are capable of collecting data nearly a mile underwater.

Glider technology is unique in that it collects data throughout the water column at relatively low cost and at no risk to human life. This is the first oil spill response in the United States where this technology has been applied.

"IOOS 's real-time data provides important information that helps NOAA and U.S. Navy scientists provide daily updates to their models to assist in understanding how and where oil is moving through the water column," said Zdenka Willis, NOAA IOOS director. "This is part of NOAA's comprehensive effort to understand the movement of oil helping to inform the response both on and below the surface, helping us to understand the impacts on the ecosystem."

IOOS is also using high-frequency radar technology to measure surface current speed and direction in near-real-time. Data collected are incorporated into oil spill trajectory models. IOOS partners at the University of Southern Mississippi are using two high frequency radar sites along the Northern Gulf of Mexico to monitor the spill's surface travels. The Southeast region of IOOS is using high frequency radar systems to collect data along the west Florida shelf and the Southeast Florida coast. IOOS partners in Southern California are helping input data from these systems so that it feeds directly into models used by NOAA's Office of Response and Restoration, which produces the science-based daily spill trajectory maps.

"Managers and officials in coastal communities use these trajectories to better prepare for oil hitting the shoreline," Willis said.

Scientists at the University of South Florida are already comparing data from two gliders that have completed their missions and are analyzing that data against water samples in the region. Eight other gliders are currently collecting data: two from Rutgers University; one from Mote Marine Laboratory; one from the University of Washington Applied Physics Lab operated in conjunction with the University of Southern Mississippi; one from the University of Delaware; one operated by Scripps Institution of Oceanography and Woods Hole Oceanographic Institution; and two from the U.S. Navy. Data and information from the gliders are available from a single website portal operated by [Rutgers University](#).

IOOS is a federal, regional and private-sector partnership working to enhance the ability to collect, deliver and use ocean information. IOOS delivers the data and information needed to increase understanding of our oceans and coasts, so decision makers can act to improve safety, enhance the economy and protect the environment. IOOS regional programs from the Gulf Coast, Southeast, mid-Atlantic, Northeast, Southern California and Northwest regions as well as the U.S. Navy are participating in the oil spill response.

NOAA's mission is to understand and predict changes in the Earth's environment, from the depths of the ocean to the surface of the sun, and to conserve and manage our coastal and marine resources. Visit us on <http://www.noaa.gov> or [Facebook](#).

On the Web:

IOOS Program: <http://www.ioos.noaa.gov>

IOOS Glider Spill Response: <http://www.rucool.marine.rutgers.edu/deepwater>